

For more information on brain-based learning:

Jensen, Eric (2005) *Teaching with the Brain in Mind. 2nd ed.* Alexandria, VA: Assoc. for Supervision and Curriculum Development

Jensen, Eric (2001) *Arts with the Brain in Mind.* Alexandria, VA: Assoc. for Supervision and Curriculum Development



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Prepared for you by:

Joan R. Fretz

Dir. of Fine & Performing Arts
Huntington Schools

631-673-2106

jfretz@hufsd.edu

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Why Neuroscientists Think You Should Take a Music Class

The power of music to connect us, lift our spirits, help us to collaborate, cooperate and express emotions are all great reasons to make music instruction part of your education.



Yet, **Eric Jensen, celebrated authority on brain-based learning**, has a few more reasons for you to keep on singing and playing.

Take a look at what neuroscientists are discovering about music and your brain....

Music Makes Your Brain Grow!

When you play an instrument, your brain needs more space for storing the skills you are developing, so it actually **grows**. Neuroscientists have made some amazing discoveries:

◆ The **auditory cortex** of a renowned violinist was found to be **twice** as thick as normal. This is the area of the brain for hearing reception.

In one study, the violinists who practiced the longest had the greatest changes in their brains!

◆ The **cerebellum**, which contains about half of the brain's neurons, was 5% larger in musicians than in nonmusicians. This is the part of the brain that is involved in keeping beat and rhythm.

◆ The **corpus callosum** was 15% larger in musicians than in nonmusicians. This is the bundle of nerve fibers that connects the left and right hemispheres of the brain.

• Fine motor exercise, like playing the violin, clarinet or piano promotes brain reorganization and nerve growth. In one study, **the violinists who practiced the longest had the greatest changes in their brains.** (Jensen, 2001, p. 33-34)



Dr. Frank Wilson, Asst. Clinical Professor of Neurology at the University of California school of Medicine says, "**Learning to play an instrument connects, develops, and refines the entire neurological and motor brain systems.**" (Jensen, 2001, p.14)

Music Helps You with Academics

- ◆ “The College Board reports that for the 1999-2000 school year, music coursework is strongly correlated with higher Scholastic Assessment Test (SAT) scores. Students with just a half-year of arts coursework averaged a 7– and 10-point gain in verbal and math respectively. **But, after 4 years of coursework in music, students averaged 49 points higher on the combined verbal and math SAT scores.**” The scores increased each year that the students continued to be involved with music, illustrating the benefits of long term, multi-year music instruction. (Jensen, 2001, p. 28)



- ◆ Playing a musical instrument strengthens spatial-temporal reasoning, which is needed to perform proportional math skills. “This critical spatial-cognitive sense allows learners to progress into fields such as **engineering, robotics, design, statistics, construction, art, genetics**, and all fields that involve comparisons and symmetrical relationships.” (Jensen, 2001, p. 26)
- ◆ In a UCLA study, students who took music lessons in grades 8-12 showed gains in math scores as well as a 40% improvement in reading, history, geography, and social skills. (Jensen, 2001, p. 23-24)



- ◆ Music instruction develops your awareness and discrimination of sounds, which are important skills for success in reading.
- ◆ Music improves memory and listening skills, by enhancing the development of our brain’s memory systems.
- ◆ Music training increases creativity and visual imagery skills.

(Jensen, 2001, p. 28, 35, 40)

Music Increases Your Emotional Intelligence

- ◆ Music improves emotional awareness and the ability to identify and manage our emotional states. “We understand ourselves better when we can express ourselves through alternate media like music. Music making forces us to create, reflect, bare our souls, ponder, react, and formulate in ways we have never done before.” (Jensen, 2001, p. 32)

Music Makes You Healthier

- ◆ “Many scientific studies have shown that music lowers the levels of the stress hormone cortisol and increases antibodies in children.” (Jensen, 2001, p.38)
- ◆ Music can affect your heart rate and blood pressure. Using music to exercise has been shown to improve training times for runners and enhance strength development. (Jensen, 2001, p. 36, 39)



As you can see, the benefits of music instruction may take months or years to show up.

So, keep practicing and enjoying your music training. You never know what great things you’ll do with that big brain you’re growing!

“After 4 years of coursework in music, students averaged 49 points higher on the combined verbal and math SAT scores.”